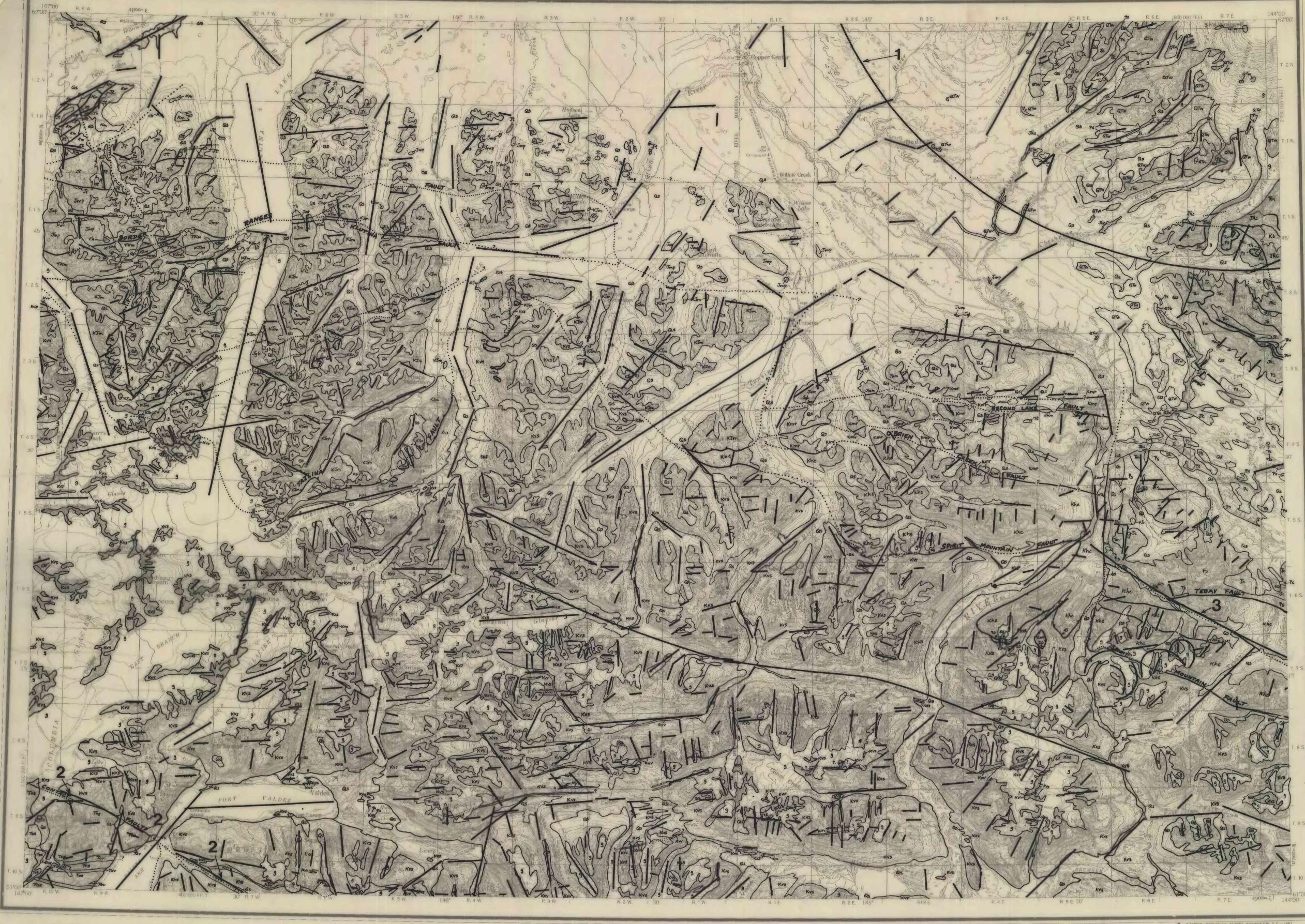
BASE FROM U.S. GEOLOGICAL SURVEY, 1960

Figure 1. Map showing location of Landsat imagery used in analyses of the Valdez quadrangle.



Geology generalized from Winkler, G.R., Miller, R.J., Grantz, Arthur, MacKevett, E.M., Jr., Silberman, M.L., Plafker, George, and Case, J.E., 1980 TABLE OF IMAGERY USED IN ANALYSES

E-1169-99CT 1692-20152 1:1,005,000 1:250,000

E-1170-99CT 2168-20223 1:1,005,000 1:250,000

Photo-optically enhanced scenes used are 1692-20152, taken June 15, 1974, and 2168-20223, taken July 9, 1975. Imagery is available from EROS Data Center, Sioux Falls, SD 57198 (specify PAO number when ordering). Example of imagery is shown in Figure 2.

This map is part of a folio of maps on the Valdez quadrangle. Landsat images of the quadrangle were analyzed for lineaments and circular and arcuate features as a possible aid in the mineral resource assessment of the area.

This study is a modified version of more detailed interpretative investigations conducted in other areas in Alaska (Albert, 1975; Albert and Steele, 1976a, b; Albert and others, 1978; Steele and Albert, 1978): the report is abridged and the methodology involved is similar to that used by Raines (1978). Details concerning the different types of imagery used are given in "Table of Imagery Used in Analyses".

Although many lineaments and several circular and arcuate features are observed from the imagery of the quadrangle, no marked spatial relation between these features from the imagery of the quadrangle, no marked spatial relation between these features and either mineralized localities or areas with mineral potential (Winkler and others, 1980b) is apparent. However, several lineaments and one of the circular features observed from the imagery do show good spatial correlation with locally prominent geologic features (Winkler and others, 1980a). The circular feature (feature 1) is associated with the

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

Mt. Wrangell volcano that is partially exposed in the northeast corner of the quadrangle. A series of lineaments (features 2) correspond to segments of the trace of the Contact fault in the southwest part of the quadrangle; another lineament (feature 3) spatially coincides with the trace of an unnamed fault exposed in the east-central part of the

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Raines, G.L., 1978, Porphyry copper exploration model for northern Sonora, Mexico: U.S. Geological Survey Journal of Resea :h, v. 6, no. 1, p. 51-58. Steele, W.C., and Albert, N.R.D., 1978, Interpretation of Landsat imagery of the Talkeetna quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-870C, 2 sheets, scale 1:250,000.

Winkler, G.R., Miller, R.J., Grantz, Arthur, MacKevett, E.M., Jr., Silberman, M.L., Plafker, George, and Case, J.E., 1980a, Geologic map of the Valdez 1° x 3° quadrangle, southern Alaska: U.S. Geological Survey Open-File Report 80-892A, scale 1:250,000. Winkler, G.R., Miller, R.J., MacKevett, E.M., Jr., and Holloway, C.D., 1980b, Mineral deposits map and resource assessment of the Valdez 1° x 3° quadrangle, southern Alaska: U.S. Geological Survey Open-File Report 80-892B, scale 1:250,000. **EXPLANATION OF IMAGERY INTERPRETATION** 

POE = photo-optically enhanced

Circular or arcuate feature

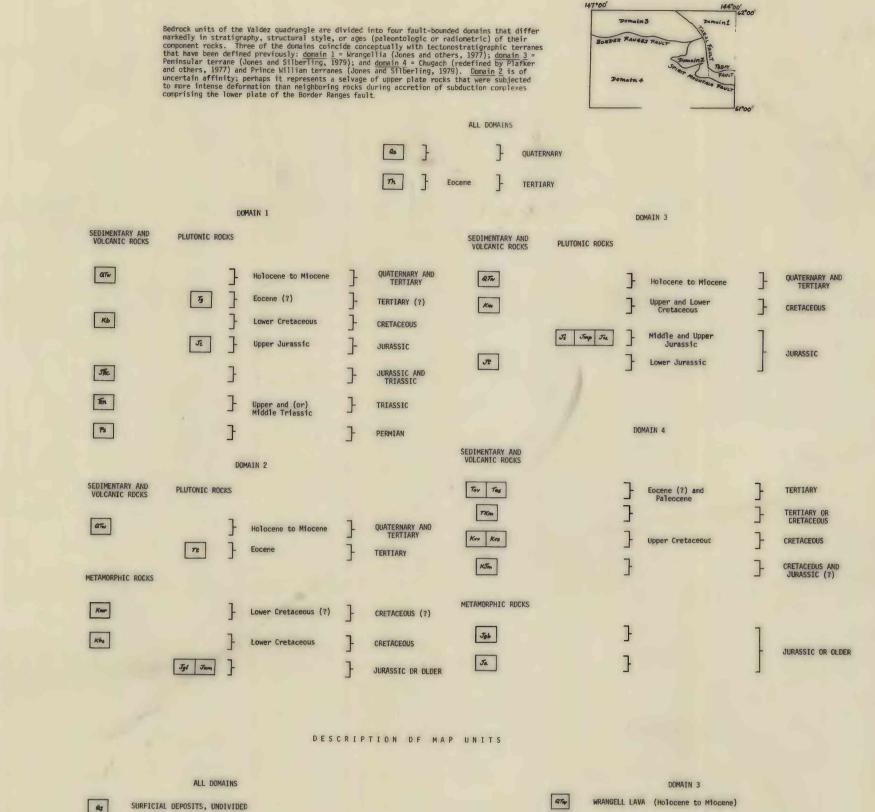
## MAP SHOWING INTERPRETATION OF LANDSAT IMAGERY OF THE VALDEZ 1° X 3° QUADRANGLE, SOUTHERN ALASKA

5 0

James R. Le Compte

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial

CORRELATION OF MAP UNITS (Geologic base generalized from Winkler and others, 1981)



INTRUSIVE ROCKS--Granite and granodiorite BERG CREEK FORMATION (Lower Cretaceous) ORCA GROUP (Eocene (?) and Paleocene) VOLCANIC ROCKS CHITINA VALLEY BATHOLITH (Upper Jurassic) VALDEZ GROUP (Upper Cretaceous) VOLCANIC ROCKS SKOLAI GROUP (Permian)--As mapped, includes:
metamorphosed Skolai and Permian gabbro intruding Skolai SEDIMENTARY ROCKS MCHUGH COMPLEX (Cretaceous and Jurassic (?)) GREENSCHIST AND TRANSITIONAL BLUESCHIST FACIES METAMORPHIC ROCKS WRANGELL LAVA (Holocene to Miocene) AMPHIBOLITE FACIES METAMORPHIC ROCKS

ALTERED TONALITE METAMORPHIC ROCKS, UNDIVIDED--As mapped, includes: Liberty Creek, Bernard Creek, and Fox Creek terranes HALEY CREEK TERRANE

GABBRO AND LEUCDGABBRO Juma ULTRAMAFIC ROCKS

glaciers and superglacial moraine

Approximate contact; dotted where concealed; queried where assumed High-angle fault, approximately located, showing dip; dotted where concealed; queried where assumed

Thrust fault, approximately located, showing dip; dotted where concealed; queried where assumed

SYMBOLS

Figure 2. Example of Landsat imagery used in analyses of the Valdez quadrangle. Band 7.

1981